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*HEART DISEASE AND THE NAUHEIM
TREATMENT*





HEART DISEASE

AND THE

NAUHEIM TREATMENT

BY

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PREFACE

MY object in writing is a limited one, to help in extending the use of the Bad Nauheim Treatment of Heart Disease to the many patients unable to visit Nauheim, unequal to the fatigue of the long journey, or to the expense of the sojourn there.

Having visited Nauheim, in 1895, and seen the good effects of the treatment in heart disease, I have since adopted it in my own practice *at the patient's house* for those unable to visit Nauheim.

I desire to bring the Nauheim treatment into use amongst the thousands of patients

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suffering from heart disease who cannot visit Nauheim owing to their inability to give up their occupation, on which their daily bread is dependent. Moreover, Nauheim is only available for a few months in the summer. Alas! heart disease cannot wait for the "summer season"; thus a vast number of the most important cases must fall back upon the treatment at home, summer or winter.

The treatment is so definite that it can be carried out at home under the supervision of the family doctor. To the latter this little publication is specially dedicated, in the hope that it may help in their own practice at home as much as it has helped me in mine. In the words of Dr. Bezly Thorne, "There is no magic in it—all is clear." In the words of Dr. Schott, "The Nauheim baths enjoy no monopoly of heart-therapy."



CHAPTER I

NAUHEIM is a quiet, rather secluded place about twenty miles from Frankfort, situated in a park-like garden on the lower slopes of the Taunus Mountains. It possesses many hotels, three establishments of baths, and a kurhaus. The baths are in the lower part of the decline from the station. An easy ascent leads up to the kurhaus.

A very full account of Bad Nauheim is given in Sutro's book on German mineral waters, published in 1851. It describes its

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chemical analysis, laying stress upon the Sprudel; yet not one word is said as to the value of Bad Nauheim in heart disease. It remained for Dr. Beneke,¹ in 1872, to make known the good results in the treatment of heart disease. Its reputation gradually in-

¹ The late Professor F. W. Beneke, of Marburg, who practised during summer at Nauheim, was the first to direct our attention to this subject about twenty-five years ago, and under his guidance many of our heart cases derived very great benefit from courses of baths at Nauheim. In the more recent cases of valvular affection, with decided murmurs from the mitral or aortic valves, or both, we have repeatedly witnessed the murmur slowly but entirely disappear, and the heart become enabled to undergo a natural amount of exertion. This was, we may remark, at a time *when no exercise cure* was practised at Nauheim, and when the place was almost unknown out of Germany ("Spas and Mineral Waters of Europe," Dr. Hermann Weber).

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creased and became firmly established in 1880, through the skill of the late Dr. A. Schott and his application of Swedish resisting exercises. Dr. Theodor Schott has followed his brother with great skill and perfected the system.

The Nauheim treatment has been admirably described and practised by Dr. Bezly Thorne, who introduced it to the profession in England from his own experience and observation.

The spring most in use for baths is the Sprudel, bubbling up into an open-air reservoir, where, losing its natural carbonic acid gas, it looks red and muddy from the deposit of iron. The Sprudel, thus deprived of its carbonic gas and iron, is used during

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the early part of the course of baths. Later on the water, conveyed direct from the spring, and not deprived of its carbonic acid, is used for the effervescing baths, which to many are more stimulating and invigorating than the ordinary saline baths.

Towards the end of the course the Sprudel water, not deprived of its carbonic acid gas, is kept flowing in and out all the time the patient is kept immersed, constituting the "wave" bath, the most invigorating of all.

The natural strength of the mineral water is at times increased by the addition of the "Mutterlauge," or concentrated solution of the chloride of calcium and other salts after the chloride of sodium has been crystallised out.

The natural temperature of the springs varies from 95 to 82 degrees Fahrenheit, but in most cases the baths are used at first at 95 to 92 degrees, and later on at a lower temperature, even 85 degrees. To most English patients the temperature of 95 degrees seems very chilling, but the stimulating effects of the mineral ingredients of the baths seems to prevent chill, and the patient soon gets accustomed to the bath. The temperature of the bath is arranged *for summer*. In winter and spring it is best not to commence the baths at a lower temperature than 98 degrees Fahrenheit.

The duration of the bath is at first five minutes, and each day a minute is added up to ten, fifteen, or even twenty minutes.

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An hour's rest in bed after each bath is considered essential for the Nauheim treatment. In the full season the great demand for the baths renders this difficult, as the accommodation for lying down is very limited, except for ladies. If unable to rest in bed for an hour after each bath, the patient goes slowly back to the hotel and then rests in bed for an hour.¹ The best time for visiting Nauheim is from May 15th until the end of June. Early in May the climate is apt to be wet and chilly; in July very close and sultry.

¹ At Wildbad the patient is carried in a covered sedan-chair from the bath-house to his bedroom in the hotel. At Gastein the mineral water is brought into the hotel, and the patient at once goes to bed for an hour.

August and September much more suitable.

The chief constituents of the mineral water for the Nauheim baths are chloride of sodium and chloride of calcium, with a small amount of iron and a very large quantity of carbonic acid. The chloride of calcium is about a tenth of the amount of the chloride of sodium. The amount of carbonic acid gas is nearly identical with the iron spring at Schwalbach, where the natural carbonic acid gas covers the bather with layers of bubbles.

The theory of Dr. Schott as to the action of the Nauheim baths is that they stimulate the cutaneous nerves, and thus, by reflex action upon the heart, slowing and strengthening the muscular power of the

ventricles. The more simple and natural explanation is that the action is physical,¹ withdrawing the blood from the heart and large vessels into the capillaries, thus lessening the distension of the ventricles. As the tension is relieved, the cardiac muscle is enabled to contract more vigorously, the dilatation of the heart is lessened, diaphoresis and diuresis follow, with relief to the circulation.

The use of the baths is the most important part of the treatment, but much of the benefit derived at Bad Nauheim is no

¹ In the words of Dr. Balfour: "The knowledge of physical laws is of the greatest consequence in the elucidation of heart disease, considering the action of the muscular structure on the valves and arteries and with the orifices and their helps or hindrances" ("Medical Physics," p. 208).

doubt due to the total change of scene, the open-air life, freedom from business cares and anxieties. With a defined object in view, the patient gives himself up to the treatment and follows the routine of baths, exercises, diet, &c.

The effects of the baths are in most cases to reduce the frequency of the pulse, to lessen the dilatation, and increase the muscular power of the heart, thus tending to improve the circulation of the blood in the large vessels and relieve the tension in the distended ventricles. Careful percussion of the heart's area before and after the bath generally shows a diminution in the amount of cardiac dulness; but this is an unreliable fact—not absolutely trustworthy

—as the same effect might follow from slight causes, such as the increased activity of respiration, from the exertion of drying the body after the bath, or the change from the recumbent to the standing or sitting posture, and so confuse the apparent result.

“Sir T. Grainger Stewart and Dr. Holman reported that they examined in the bath at Nauheim, a man whose heart was greatly dilated and whose pulse was 124, irregular and small. After three minutes’ immersion in the bath, the pulse had fallen to 114, and in six minutes to 108, whilst it had become evidently better filled. After eight minutes they percussed his heart, and found that the dulness had receded in every direction” (*The Medical Annual*, 1897, p. 284).

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There are two cures at Nauheim, a short and a long one. In most cases a month's treatment is long enough. The benefit gained the first month is often lost by the prolonged course of six or seven weeks.

The short course should not extend beyond twenty-one baths in twenty-eight days. After it, the best course for the patient is to leave Nauheim, and take the "after-cure" in the mountains, and then return for the exercises.

The long course in very many cases destroys the good effect of the short course. The doctor hoping to do more good by prolonging the treatment finds that exhaustion follows, and the ultimate result often bad and discouraging.

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CASE NO. 1 was one of mitral stenosis and enlargement of the right side of the heart. I sent him to Nauheim last August, where he had a six weeks' course. At first he improved; but after the tenth bath felt himself to be getting weaker and desired to be sent away. Yet the treatment was persisted with for twenty-eight baths, in thirty-nine days, and he got weaker and weaker as the duration of the bath was increased to twenty minutes. He returned with the dilatation of the heart just the same as when he went, the mitral murmur louder and more pronounced. During the course, he found it a great disadvantage that he was not able to rest in bed after the bath, but allowed merely to recline on a couch for a few minutes.

Nothing was said to him about the movements. For many months after his return he was low and out of condition, an easy prey to influenza, from which he is now (March) gradually recovering. The course of twenty-eight baths was evidently too long, and the duration of the bath up to twenty minutes too exhausting.

At Nauheim the best time for the baths is early—about ten or eleven o'clock in the morning—so as to ensure a good hour's rest in bed afterwards, and yet spend all the afternoon in the open air, sketching, or sitting under the trees listening to the music, open-air carriage exercise, short walks, quiet massage, or the exercises late in the afternoon, after resting during the day.

During the stay at Nauheim it is important to have a resting life for the body, but, above all, to avoid *ennui* and to keep the mind active and fully occupied. Otherwise the patient is apt to be dwelling on his sensations and symptoms, and gets discouraged.

The "special" or resistance movements¹ used at Nauheim are not difficult in home practice. They consist of sixteen arrangements, which the family doctor could easily learn and apply himself. This is much the best plan for the patient, as the doctor can

¹ In Dr. Bezly Thorne's interesting little volume, "The Schott Methods of the Treatment of Chronic Diseases of the Heart," second edition, there is a very clear description of the various exercises.

best apply the amount of resistance. If unable to find time to apply them himself, any ordinary nurse could be taught their application, and under the doctor's superintendence they may be most safely used.

I know of one case of angina much relieved by the course at Nauheim. On his return the patient continued the exercises at home for six months afterwards, with much benefit, by the help of his son, who accompanied his father to Nauheim, watched the exercises practised there, and accurately applied them afterwards.

CASE NO. 2.—The danger of Nauheim exercises in cases of gouty degeneration of the arteries is illustrated by the following case :—A gentleman, aged 79, of a

gouty constitution, suffering from dilatation of the heart, with a mitral murmur, difficulty of breathing on walking and occasionally at night, unable to undergo the fatigue of the journey to Nauheim, had a course of eighteen baths at home, most carefully carried out under strict medical (daily) superintendence, at 5 p.m., at 97 to 96 degrees for five, gradually increased to seven and ten minutes. During the first fortnight of the baths there was manifest increase of strength; his colour improved as if from the full effect of iron.

Then the resisting exercises were added on to the baths. Towards the end of the course of baths he lost a little of the early improvement. After the course of eighteen baths

was finished, the exercises were continued for a week longer ; then—in the very act of the last exercise of the course—a small blood-vessel burst on the lung, and slight hæmoptysis came on, which continued for upwards of three months, so that most of the gain from the course was lost. The breathing was not improved.

The mechanical, or Zander exercises advocated by Dr. Groedel are decidedly inferior to the Swedish exercises adapted by Dr. Schott. The human arm is far safer to trust to for resistance than the machine made Zander.

At Nauheim it is important, but not easy, for English patients to diet properly, as it is difficult to select nourishing, whole-

some food out of the many dishes set before them. For those who can afford it the best plan is to avoid the *table d'hôte* altogether and go to the kurhaus, where wholesome food can be specially ordered more in the English fashion.

The "after-cure" is most important. If to the mountains, a place not too elevated, in a dry, open situation, should be selected. The best place is amongst the Alps at an elevation of 3,000 or 4,000 feet above sea-level, where the air is clear and dry, and there are long, easy slopes where systematic open-air exercise can be taken without much ascending. Among the most suitable are Monte Generoso, above Lugano; or Gastein, near Salzburg in Austria, with its miles of winding

pathways, nearly level; or the Eggischorn, with its two or three miles of easy walks, at upwards of 5,000 feet *elevation*.

CASE No. 3. — For many years a lady suffered from cardiac weakness, disease of the mitral valve, the result of rheumatic fever.

In August, 1895, I sent her to Nauheim, where she took the course under Dr. Schott, with great benefit. Unfortunately, for the "after-cure" she was induced to go to Engleberg, a wet, relaxing climate in Switzerland, where she got a fresh attack of rheumatic fever. She was removed to Lucerne for medical treatment, and died there at the end of September.

In cases of thickening or deposit on the

valves of the heart, the result of rheumatic fever, the action of the Nauheim baths has had a good reputation for many years, even before the Schott treatment of resistance movements was added to the use of the baths. Dr. Beneke found the Nauheim baths useful in promoting absorption of the lymph from the cardiac valves, the result of rheumatic fever. These cures were likewise effected independently of the so-called Nauheim exercises.

“Speaking generally, *the baths*, as compared with the exercises, offer special advantages for the treatment of those cases in which a rapid, feeble, and perhaps also irregular or intermittent pulse is the expression of cardio-vascular degeneration, whether

there be coexisting valvular lesions or not" (Dr. Bezly Thorne).

The Nauheim waters for drinking are very little used: a very small space in the garden is given to them. They are said to be similar to Kissengen, but are utterly inferior to the renowned Rakoczi at Kissengen.

The subject of cardiac pathology has become much more prominent and important of late years because of the increase of heart disease, due to the following causes:—

1. The strain suddenly put upon the heart by the hurrying to catch trains, rushing upstairs and along platforms, with the deathlike struggle to get in before the train starts.

2. The strain upon the muscular structure of the heart and large vessels by violent exercises — especially rowing and racing—which quickly sends a sudden rush of blood to the distended heart, whose enfeebled muscular power is unable to contract vigorously and send the current of blood onwards at an even pace.

3. The injurious effect of typhoid fever on the heart and its muscular walls, noticed by Dr. Stokes of Dublin, is much more frequent after influenza, which is one of the most exhausting of all diseases *in its after effects*, many cases of heart disease going on perfectly well till the onset of influenza. The patient when recovering from the attack finds himself breathless on exertion

and unable to mount the stairs as of old ; in fact, the "compensation" kept up through many years of active life is then lost through weakening of the cardiac muscle and consequent dilatation of the ventricles, too feeble to contract and send on the current.

4. The injurious effect of rheumatic fever on the valves of the heart and the myocardium.

5. Gout and the prevalence of Bright's disease of the kidneys, due to excess in the use of alcoholic drinks ; also excess in the use of animal food : hence degenerating arteries and gouty deposits on the valves.

In the diagnosis of heart disease percussion is of great consequence, almost as

much as the use of the stethoscope. In treatment the accurate use of percussion is even more important. It enables the doctor to watch the capacity of the ventricles and to learn how far the muscular walls are distended, and the ventricles unable to send on the current of blood.

As a guide in the use of Nauheim baths, percussion is a good test of their suitability. Ordinary percussion—in the words of Dr. Maguire, “finger upon finger is the best”—is more trustworthy than auscultatory percussion. The latter, in the words of Sir William Broadbent, “leaves room for exercise of the imagination, and its results are untrustworthy.” In many cases careful percussion in the ordinary way corrects and

invalidates the lines marked out by auscultatory percussion which uses an ordinary pencil to percuss, while the binaural stethoscope is applied to the ear. It looks a very poor, unreliable substitute for the ordinary percussion of a dexterous operator. By percussion we can map out exactly the dimensions of the heart and of the large blood-vessels, learn the amount of dilatation, and watch the result of the treatment.

For patients suffering from heart disease, who can afford the time and expense, no doubt the best and wisest course for them is to go to Nauheim and there have the treatment under Dr. Schott's superintendence. If possible to give time to the course, have the set of baths first; rest

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after the course for a few days, then have the course of resistance movements. To many this course is too tedious, therefore the baths and muscular movements can be combined in the six or seven weeks' course.

CHAPTER II

IN commencing a course of Nauheim baths at home it is most important carefully to examine the patient before commencing the treatment, and occasionally once in two or three days during the course ; attend to the functions of the stomach, kidneys, and liver, especially the latter. It is important also to explain the exact arrangements and expected results of the course of baths, so as to enlist the help of the patient and friends in the management ; above all to

urge that the course should be persevered with for the exact number of baths prescribed. In all this, the patient and friends are very willing helpers, as most cases of heart disease have very decided signs, symptoms, and sufferings—the exact opposite of Bright's disease, in which the patient often exclaims, "There is nothing wrong with my kidneys: I never have pain in my back!"

1. Arrangements should be made for the course of baths, so as to keep to a prescribed hour.

2. The baths should be taken in sets of three, with one day's rest. The medical attendant ought to visit the patient after each bath of the first set of three, subse-

quently to visit after each third bath during the course, so as to watch the pulse and the area of dilatation, and the amount of reaction after the bath.

Of all diseases those of the heart require the most skilful and careful treatment. The course of Nauheim baths at home should be carried out with rest of mind and body, if possible a holiday from the daily occupation. All the arrangements of the baths should be carried out accurately and most carefully, without haste or hurry—the bathroom cleaned and ventilated, the saline constituents added and the temperature settled before the patient undresses. In the bath to rest quietly without much movement. After the bath the patient

should sit down in a bath-sheet—so as to dry the body without much exertion—and thus promote a good reaction and avoid hurrying the circulation; then to rest in bed for a full hour, and not to go out of doors at night after the bath when taken at 5 p.m.

The chemical constituents of the Nauheim baths are well known, and the ingredients¹ for preparing the bath at home can easily be supplied by any chemist. The ordinary full bath in general use in England holds about fifty gallons of water.

¹ Ten pounds chloride of sodium in powder or block, and ten ounces chloride of calcium mixed with a pint of distilled water. The chloride of sodium should be dissolved in the bath first, then the chloride of calcium added.

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The chemical ingredients to be added are five to ten pounds of chloride of sodium and five to ten ounces of chloride of calcium. In the first three baths five pounds of the chloride of sodium and five ounces of the chloride of calcium, then increased up to the full quantities of ten pounds of chloride of sodium and ten ounces of chloride of calcium in each bath; thus, as at Nauheim, using the weaker strength in the early part of the course.

In home practice the effervescing saline baths are easily obtained by adding to the baths prepared with the saline ingredients Sandow's Carbonic Acid Tablets, to be had at any chemists.

In the use of the saline baths at home

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in summer it is best to begin at 97 degrees Fahrenheit for the first three baths, the next three at 95, the next set 94, so on, cautiously reducing the temperature a degree till the last six baths are taken at 88 to 85 degrees; but the duration at 85 should not exceed ten minutes. The lower temperature necessitates more care to avoid chill or exhaustion after the bath.

In winter, spring, and late autumn the temperature should not be lower than 95 degrees.

The baths should be taken in courses of three; a bath each day for three days, then omitted for one day, so on for eighteen or twenty-one baths.

The best time for the bath is five o'clock

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in the afternoon, so as to have a quiet hour's rest in bed after the bath before dinner. The hour's rest in bed after the bath is essential. When time is no object 11 a.m. suits well.

When kidney complication (albuminuria) exists, bedtime is best, so as to get a gentle perspiration all night after the bath.

The patient should stay in the first bath for five minutes, the second for six, the third for seven minutes; the next set of three baths eight minutes; the next three ten minutes; the next three ten minutes; the fifth set fifteen minutes; the sixth set ten minutes, and the seventh set for seven minutes. Before the patient undresses the bath should be perfectly

arranged and ready, so as to have no delay after undressing; while in the bath to rest quietly, not moving the hands; after the bath to dry in a warm sheet whilst sitting on a chair, put on a warm woollen nightdress and go into the warm bed for an hour, then to dress quietly for dinner. During the use of the baths extreme care should be taken to avoid chills or exposure to currents of cold air.

The saline bath should not be taken when the patient is tired by exercise; and at least two hours should have elapsed since the last meal.

It is desirable that the patient should have some one in the bathroom to watch lest any tendency to faintness or exhaus-

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tion, and to help in the process of drying after the bath.

It is usual to discontinue all medicinal treatment during the course, unless called for by some special need, such as dropsy, or cardiac asthma, or bronchitis. A remedy often prescribed at Nauheim is infusion of Digitalis, which Dr. Schott told me was his favourite prescription in aid of the baths in the bad cases.

Once or twice during the course of baths it may be necessary to examine the area of cardiac dulness before and after the bath; but although a satisfaction to the doctor, it is a risk to the patient, delaying *the resting after the bath* and causing nervousness. It is sufficient to take the

tracing of the area of dulness at the commencement of the course and at the conclusion of each set of three baths, but not to weary the patient by doing it frequently. It is less disturbing to watch the effect of the bath on the pulse and the heart's action after the patient has settled comfortably in bed.

During the course of baths the management of the diet, food and drink is most important. The meals to be small in bulk, yet nutritious : animal food, fresh meat, fresh fish, poultry, or game, twice a day. Most of the bread should be taken as crust or dry toast with fresh butter ; soft bread to be avoided. Fresh vegetables, well cooked, at least once a day. Farinaceous puddings

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sparingly, or not at all. Fresh fruit, stewed, moderately; but no uncooked fruit and no uncooked vegetable. Pastry, tarts, cakes, should be avoided; also sweets, jam, marmalade, honey. Coffee¹ should be discontinued, and China tea, infused no longer than two minutes, or cocoa, chocolate, or milk be taken. If the patient be accustomed to the use of wine, let him continue it, red or white, whichever suits best, but avoid spirits, ale, and stout.

The "dry diet" suits many cases of

¹ In many cases of irritable hearts I have known very distressing effects from the use of coffee, which in some persons causes a dull, fixed pain over the sternum and præcordia and choking akin to angina. Strong tea begets palpitation, but not the fixed pain with anxiety that coffee produces.

heart disease. At the meals to eat freely and drink sparingly. Drink may be taken freely three or four hours after meals, or an hour before meals. Hot water is often the best drink. At Nauheim, Dr. Schott forbids the use of coffee, sparkling wines, aerated waters, pepper, and all highly-seasoned food.

During the course of saline baths it is most important to regulate the amount of exercise, especially to avoid long walks, or a quick pace, or the least approach to over-fatigue. Of all exercises the worst for heart cases is rowing. Quiet exercise on horse-back is one of the best; next to that golf. Cycling is treacherous—good in a few cases, and mischievous in many. Lawn-tennis is

too exciting, and causes irritability of heart from the quick, sharp runs. The best rule is to advise the exercise which gives free action to the lower limbs and not much to the upper.

Of all organs of the body the heart requires rest in the recumbent or semi-recumbent posture *after exercise*. With City men this is often neglected. After the day's work an hour on the couch before the late dinner or supper is well spent. Cardiac weakness is apt to beget irritability and restlessness, and thus prevent the taking of rest.

In the treatment of diseases of the heart Dr. Oertel introduced the graduated system of walking uphill—a very risky plan of

treatment, useful to one, but injurious to many; a very effectual way to prove the "survival of the fittest," as it killed off the bad cases, with an occasional brilliant cure of the slight ones.

Laying aside the idea of Dr. Oertel as to graduated exercise in *ascending mountains*, it is most important to consider the effect upon the heart of mountain air, which stimulates the production of red corpuscles and of hæmoglobin. Mountain air also relieves the respiration, taking a weight off the body. When the atmospheric pressure in the lowlands is equal to fifteen pounds to the square inch, in the Engadine it is at least three pounds, or nearly so, less. Thus the muscles of respiration are more active,

and walking is much easier ; the heart is relieved, as the increased volume of blood in the capillaries lessens the dilatation of the ventricles.

Open-air exercise on the level, in the moderately high parts of the Alps, is the most helpful, especially if followed by rest in the recumbent posture.¹

The cases most suitable for the Nauheim treatment are :—

¹ In September, 1893, I met a patient at St. Moritz, in the Engadine, suffering extreme distress from breathlessness, oppression of the head, distension of the veins of the neck, face, and head, vertigo, a condition indicating danger to the brain. I urged him at once to go 1,000 feet lower to Wesen, near Davos. There absolute and perfect relief at once followed, and he finished his holiday in comfort.

1. Those of dilatation of the heart,¹ without valvular murmur, coming on from any exhausting cause, with irregularity of the heart's action, palpitation, præcordial pain, breathlessness on exertion. Such cases are the most hopeful of all for permanent benefit.

¹ "In dilated hearts the immediate result of about ten minutes' exercise is often a diminution in the superficial area of cardiac dulness. This diminution does not last, and it would be out of place here to discuss its therapeutic significance ; but what is much more important is the satisfactory result claimed to follow a prolonged course of this treatment in the class of 'cardiac' cases mentioned above. There appears to be considerable danger, however, of patients with heart disease and insufficient compensation of such a severe character that rest in bed is absolutely necessary, being injudiciously recommended to try the Nauheim treatment" (Dr. Hermann Weber).

2. Dilatation of the heart with valvular murmur,¹ or with loss of compensation, in old cases of heart disease from bronchitis and degeneration of the myocardium.

“Such cases we have seen cured, not only from the system of combined treatment by baths and exercises, but long ago from the use of the baths at Nauheim, BEFORE THE EXERCISES had been introduced” (Dr. Hermann Weber).

“The exercises are inferior to the baths in

¹ Of all the signs of cardiac disease murmurs are those most usually confided in, and yet they are really those of least value, first, because murmurs truly of valvular origin may disappear temporarily or permanently. The existence of a well-defined murmur is not by any means a certain indication of actual valvular disease” (Balfour, pp. 35-41).

range of applicability and in efficacy" (Dr. Leith).

3. Heart failure after influenza. This class of case has become very numerous of late years, the most frequent signs being breathlessness, inability to walk uphill or upstairs, præcordial pain, restless nights, with cardiac asthma. The effect of influenza is the same in degree as the injurious action on the heart of typhoid fever, first described by Dr. Stokes of Dublin. In such cases rest to the heart is quite as necessary as open-air exercise; early to bed and late up, so as to insure nine or ten hours in the recumbent posture; also to rest once or twice during the day for an hour, in bed or on the couch.

CASE No. 4.—Cardiac distress for three

years after influenza. Completely restored by eighteen Nauheim baths at home, although unable to have daily medical superintendence.

Mr. C., aged 60, of a gouty constitution, had been out of health for three years since a severe attack of influenza, suffering from palpitation, breathlessness on exertion, irregular, intermittent pulse, varying from forty to forty-six in frequency—seldom above forty—diastolic murmur over the region of the mitral valve, the area of cardiac dulness much increased, urine of sp. gr. 1020, containing $\frac{1}{70}$ albumin, and much uric acid gravel. I advised a course of eighteen baths at home, and to discontinue all medicine during the course. Being winter (Decem-

ber) the baths were used at 98 to 97 and 96 degrees for seven to ten minutes at 6 p.m., followed by an hour's rest in bed before dinner. The course of eighteen baths was carried out in twenty-four days, accurately and carefully managed in every detail, from written directions, by his wife at his own house in the country. I examined him most carefully before commencing the course, and regularly once a week during the course. The effect was magical; distinct improvement of the breathing, and of the heart and kidneys, followed, and he was restored to a state of health that he had not known for three years. The improvement has continued. I examined him on March 15th. The area of

dulness was normal, and all signs of dilatation gone. The pulse that for three years seldom exceeded 46 was 60, equable, soft; the urine of sp. gr. 1020, absolutely free from albumin.

4. Angina pectoris, often accompanied by agonised pain through the chest and shooting down the left arm, with sense of oppression over the chest, gasping for breath, irregular, intermittent pulse. Happily there are hundreds of slight cases to one severe; yet even that one may derive lasting benefit from Nauheim treatment, especially if it be used with caution. Angina pectoris depends much upon the nutrition of the heart muscle, and the lessened supply of blood to its structure, through obstruction in the

coronary arteries : hence the importance of adopting every means to promote the nutrition and improve the general health ; such as extra care in diet, open-air exercise followed by rest, the avoidance of tea, coffee, and tobacco, the moderate use of wine.

5. Cases of failure of compensation in long-standing disease of the muscular structure of the heart, and incompetency of valves, stagnation of the current of blood in the capillaries, the lowered muscular power preventing the margins of the valves from closing, and thus leading to regurgitation. As this increases, obstruction of the liver follows, and dropsy. Even in such apparently hopeless cases perfect cure may be obtained from the Nauheim treatment, even after the

failure of Digitalis or Strophanthus. "After Nauheim the action of Digitalis is more satisfactory and certain" (Dr. Heineman).

CASE NO. 5.—Advanced disease of the heart with mitral and tricuspid regurgitation and dropsy. Perfect relief from eighteen Nauheim baths at home, although unable to rest from business.

T. H., aged 58, consulted me in 1896, after a severe attack of bronchitis, suffering from irritable cough, wheezing, difficult expectoration, oppression over sternum, gradually increasing dyspnœa on exertion, cardiac asthma, and palpitation at night, unable to lie down in bed. To use his own words: "If I lie on the left side, palpitation; if on the right side a sense of suffocation"—altogether a

most piteous state. I found far-gone dilatation of the heart, especially of the right side, with diastolic murmur loudest over the tricuspid valves, œdema of the legs and of the right lung, enlargement of the liver, urine scanty, containing a trace of albumin, $\frac{1}{80}$, and at times a little sugar (six grains to the ounce).

Being a clerk, obliged for his daily bread to continue his work, and unable to get home until 7 p.m., I advised him a course of eighteen Nauheim baths at 98 degrees, at bedtime, for seven minutes each. At the end of the course he reported, "I can lie comfortably on either side, and have lost all sense of suffocation." I found the area of dilatation much lessened, the albumin gone. He re-

sumed his City work with renewed health. After two months he had a relapse in March from sudden chill, with bronchitis, dyspnœa on exertion, suffocating cough ; urine sp. gr. 1018, albumin $\frac{1}{40}$. Being unable to stay away from his work beyond two days, I prescribed three Nauheim baths at bedtime, on Friday, Saturday, and Sunday nights, he being obliged to return to his work on Monday morning. The effect was again perfect relief, and he went back to his work on Monday morning in great comfort. This case is a good illustration of a bad case treated at home without any help from rest, unable to leave his work till 7 p.m., and yet the most marked relief followed the course of baths without the exercises. It is most important

not to hesitate in the course of Nauheim baths, even in the worst cases, and under the most unfavourable circumstances.

6. In cases of thickening of the valves of the heart after rheumatic fever, much may be done to promote absorption of the lymph from the valves. In such cases, in home practice, it is best to commence the treatment by baths at 98 degrees, and to reduce the temperature very slowly, also to watch the least approach to chilliness after the bath. If the reaction is imperfect, or exhaustion follows the bath, increase the temperature a little and shorten the duration of the bath.

7. In many cases of chronic disease of the heart, albuminuria is a distinct accompaniment, especially in those of a gouty consti-

tution. In such, the effects of the saline baths at home is much better when taken at bedtime, so as to have the free action of the skin for eight to ten hours after each bath. One patient suffering from albuminuria, with a much dilated heart, and a soft systolic murmur over the mitral valve, the result of rheumatic fever, derived very great benefit from a course of twenty-one saline baths taken at bedtime at 98 degrees Fahrenheit for seven minutes, gradually increased to ten minutes. The albuminuria disappeared after the course. He volunteered the remark, "I have much more perspiration after the saline baths than after the ordinary warm baths." In a few cases the saline baths at bedtime cause sleeplessness. In

such it is best to order the bath at 6 p.m. or even at 7 p.m. for business men unable to get home early.

8. Even in the most serious cases of heart disease, aortic regurgitation, with pains over the sternum and down the left arm, breathlessness on exertion, and œdema of the lower extremities ; also in far-advanced dilatation of the heart with tricuspid regurgitation, obstruction of the portal circulation, inaction of the liver with ascites, and general dropsy. In such important help may be obtained by the saline baths—if not cure, yet most manifest improvement.

CASE NO. 6.—Cardiac weakness for many years, dilatation of the heart with mitral and tricuspid regurgitation, enlargement of

the liver. Very decided benefit from twenty-one Nauheim baths at home, but relief only temporary. A lady, aged 59, consulted me in October, 1896. I found her case a most unpromising one: heart much dilated, with mitral and tricuspid regurgitation, enlargement of liver, scanty secretion of urine—sp. gr. 1,020, containing $\frac{1}{80}$ albumin—œdema of both extremities, especially the right. Notwithstanding very careful medical and general treatment, she remained in a very unsatisfactory condition, until in December I advised the Nauheim baths at home, which were carefully carried out at her own house by her daughter, twenty-one baths spread over thirty-five days, at 98 degrees for five, gradually increased to seven and ten minutes.

The relief to her breathing and the liver and kidneys was very satisfactory, lasting for some months. Afterwards she had a relapse because of the extensive organic disease.¹

9. Failure of compensation owing to overdistension of the ventricles. When the most careful medical and general treatment fails to restore the compensation, the Nauheim baths often succeed, and subsequently the medical treatment is more helpful.

Next to exercise and rest in heart cases, the clothing is most important. Most people,

¹ "As to old-established affections of the valves, spa treatment has no curative influence on them as such ; but the morbid conditions to which they give rise, viz., dilatation of the heart, catarrh of the lungs, congestion of the liver and abdominal organs, may be relieved " (Dr. Hermann Weber, p. 317).

men especially, clothe too heavily. Dense, thick underclothing, thick, heavy, long overcoats oppress the lungs and heart, and make exercise a burden. Copious perspiration after even a short walk is followed by chill and bronchitis, on recovering from which extra clothing is often added, till the overburdened heart gets strained under the heavy weight, and open-air exercise gets more and more neglected.

The "Ulster" is an abomination. Even in mild winter weather it is better to walk without an overcoat on ; but to carry it over the arm to put on after exercise, or when going home at night.

One of the most important aids to heart cases is to dispense with braces, to make

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the clothing thin but warm, to avoid the weight of long coats, except for actual journeys. The braces hinder the breathing. Exercises in the open air is essential, so as to expand the lungs and thus relieve the heart.



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